

## USGS-NPS Vegetation Mapping Program

### Isle Royale National Park

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#### Larix laricina / Alnus incana Forest

COMMON NAME	Tamarack / Speckled Alder Forest
SYNONYM	Northern Tamarack Rich Swamp
PHYSIOGNOMIC CLASS	Forest (I)
PHYSIOGNOMIC SUBCLASS	Deciduous forest (I.B)
PHYSIOGNOMIC GROUP	Cold-deciduous forest (I.B.2)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (I.B.2.N)
FORMATION	Saturated cold-deciduous forest (I.B.2.N.g)
ALLIANCE	LARIX LARICINA SATURATED FOREST ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM TERRESTRIAL

#### RANGE

##### **Isle Royale National Park**

This community is only found at the southwest end of Isle Royale, near Siskiwit Bay. Only two examples were sampled in 1998, one west of Hay Bay campground, and one west of Lake Halloran.

##### **Globally**

This community is found in the United States in northern and central parts of Minnesota, Wisconsin, and Michigan; and in Canada in Ontario, Manitoba, and probably elsewhere.

#### ENVIRONMENTAL DESCRIPTION

##### **Isle Royale National Park**

This community occurs in wetland depressions overlying conglomerate or sandstone bedrock near Siskiwit Bay. These wetlands occur at relatively low elevations (620 to 640 feet); these sites are likely old lake bed deposits from postglacial lakes (probably Lake Nipissing). Soils are saturated muck or peat. The species composition and the saturated soils (even in a very dry summer) suggest that these wetlands are kept saturated by groundwater.

##### **Globally**

Stands are found on the shores of lakes and rivers above the flooding level, as well as margins of flowage areas of peatland complexes. The substrate is primarily a well-decomposed woody peat in wet, saturated soils, but can also be a moist mineral soil. Hummock and hollow microtopography is moderately to well developed, with standing water occasionally occurring in the hollows. (Sims *et al.* 1989, MN NHP 1993, Harris *et al.* 1996).

#### MOST ABUNDANT SPECIES

##### **Isle Royale National Park**

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Larix laricina</i>
Tall shrub	<i>Thuja occidentalis</i> , <i>Betula pumila</i> , <i>Alnus incana</i>
Short shrub	<i>Chamaedaphne calyculata</i> , <i>Ledum groenlandicum</i>
Graminoid	<i>Carex lasiocarpa</i> , <i>Calamagrostis canadensis</i>
Nonvascular	<i>Sphagnum</i> spp.

##### **Globally**

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Larix laricina</i>
Tall shrub	<i>Alnus incana</i> , <i>Betula pumila</i> , <i>Thuja occidentalis</i>
Short shrub	<i>Ledum groenlandicum</i> , <i>Chamaedaphne calyculata</i> , <i>Gaultheria hispidula</i>
Nonvascular	<i>Sphagnum</i> spp.

#### CHARACTERISTIC SPECIES

##### **Isle Royale National Park**

*Larix laricina*, *Alnus incana*, *Betula pumila*, *Carex lasiocarpa*, *Carex livida*, *Sphagnum* spp.

##### **Globally**

*Larix laricina*, *Alnus incana*, *Chamaedaphne calyculata*, *Betula pumila*, *Sphagnum* spp.

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#### VEGETATION DESCRIPTION

##### **Isle Royale National Park**

The tamarack rich swamp is a deciduous, needle-leaved wooded wetland. This community has a woodland physiognomy, with about 30% canopy cover of trees (over 5 m tall), from 20 to 60% cover of tall shrubs (2 to 5 m tall), about 20% cover of short shrubs (0.5 to 2 m tall), and 5 to 10% cover of dwarf shrubs (< 0.5 m tall). *Larix laricina* is the most abundant canopy tree (average 26% cover); *Thuja occidentalis*, *Picea mariana*, and *Pinus strobus* may also be present, generally with less than 10% cover, but *Picea mariana* can be higher. The most abundant tall shrubs are *Thuja occidentalis*, *Betula pumila*, *Alnus incana*, and *Larix laricina*. The most abundant short shrubs are *Chamaedaphne calyculata*, *Ledum groenlandicum*, and *Myrica gale*. The most abundant dwarf shrubs are *Andromeda polifolia* var. *glaucophylla*, *Vaccinium oxycoccos*, *Gaultheria hispidula*, and *Rubus pubescens*. Herbs typically have about 40 to 50% cover; the most abundant herbs are *Carex lasiocarpa*, *Calamagrostis canadensis*, and *Solidago uliginosa*. *Sphagnum* spp. are abundant in the groundlayer, averaging about 40% cover.

##### **Globally**

The canopy layer varies from closed (60-100% cover) to open (25-60% cover), and may also range from 3-10 m in height. *Larix laricina* is the dominant tree species, with associates of *Picea mariana* and *Thuja occidentalis*. The shrub, herb, and moss layers can be very rich. The shrub layer typically contains *Alnus incana*, along with *Abies balsamea*, *Cornus sericea*, *Salix* spp., and *Picea mariana*. The dwarf-shrub layer is strongly ericaceous, including *Ledum groenlandicum*, and *Gaultheria hispidula*. Other dwarf-shrubs include *Chamaedaphne calyculata*, *Linnaea borealis*, *Lonicera villosa*, *Ribes triste*, *Rosa acicularis*, and *Rubus pubescens*. Herbaceous cover is variable; species include *Carex disperma*, *Carex lacustris*, *Carex trisperma*, *Coptis trifolia*, *Cornus canadensis*, *Equisetum sylvaticum*, *Galium triflorum*, *Maianthemum canadense*, *Maianthemum trifolium*, *Mitella nuda*, *Trientalis borealis*, and *Viola renifolia*. The moss layer, which is sometimes patchy, includes *Dicranum polysetum*, *Hylocomium splendens*, *Pleurozium schreberi*, *Ptilium crista-castrensis*, *Rhytidiadelphus triquetrus*, *Sphagnum capillifolium*, *Sphagnum girgensohnii*, and *Sphagnum nemoreum* (Sims *et al.* 1989, Minnesota NHP 1993, Harris *et al.* 1996).

#### OTHER NOTEWORTHY SPECIES

##### **Isle Royale National Park**

The orchids *Platanthera dilatata* and *Spiranthes cernua* were common in one site, and the other site had many standing dead snags of *Thuja occidentalis*.

#### CONSERVATION RANK G4.

DATABASE CODE CEG002471

MAP UNITS 65, 57

#### COMMENTS

##### **Globally**

Fires may move through this community in dry years.

#### REFERENCES

- Harris, A. G., S. C. McMurray, P. W. C. Uhlig, J. K. Jeglum, R. F. Foster, and G. D. Racey. 1996. Field guide to the wetland ecosystem classification for northwestern Ontario. Ontario Ministry of Natural Resources, Northwest Science and Technology, Thunder Bay, Ontario. Field guide FG-01. 74 p.
- Minnesota Natural Heritage Program. 1993. Minnesota's native vegetation: A key to natural communities. Ver. 1.5. Minn. Dep. Nat. Resour., Nat. Heritage Prog. St. Paul, Minn. 110 p.
- Sims, R. A., W. D. Towill, K. A. Baldwin, and G. M. Wickware. 1989. Field guide to the forest ecosystem classification for northwestern Ontario. Ontario Ministry of Natural Resources.